

How have Spanish regions adjusted to recent immigration?

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Outline

I. Introduction

II. Our project

- Data sources

- Descriptive statistics

- Econometric specification

- (- Results)

III. Concluding remarks

I. Introduction

1) How do (closed) economies adjust to immigration?

- Hypothesis: immigration flows lower wages/employment for natives who are close substitutes

- Approaches:

 - a1) Natural experiments (Card, 1990)

 - a2) Spatial correlations (Altonji and Card, 1991)

 - a3) Age-education cells (Borjas, 2003)

- Conclusion: Small or no effect (in the US)

2) How do open economies adjust to immigration?

- Hypothesis: immigration absorbed by increasing exports of immigrant-intensive sectors (Rybczinsky effect)
- Approach: Between-Within industry decomposition
Gandal, Hanson, Slaughter (2004) for Israel
- Conclusion: Small Rybczinsky effect
 - Global changes in technology (SBTC)

3) Immigration and technology choice

- Hypothesis: firms choose technologies that use locally abundant factors intensively
- Approach: Between-Within industry decomposition using spatial correlations (Lewis, 2004)
- Conclusion: Important channel of adjustment (in US)
 - Factor intensity at sector level
 - Production techniques at plant level

II. Our project

- Evaluate these channels of adjustment (wages, employment, sectoral composition, factor intensity) for Spain
Interesting because of dramatic increase in very short period and large regional variation
- Assemble panel dataset at province level, using available sources
- Spatial correlation approach
Low internal mobility

Outline

1. Spatial correlations approach
2. Immigration and regional skill distribution
3. Native employment and wages
4. Sectoral composition and factor intensity

Spatial correlations approach

- Exploit differences in size immigration among Spanish provinces
- Criticism
 - 1) Heterogenous regions
 - 2) Displacement of natives
 - 3) Endogeneity of immigrant flows to labor market conditions
- We address them by
 - 1) Region fixed effects
 - 2) Test displacement of natives
 - 3) Instrument for immigrant location choices

II. Changes in local labor force

1. Where do immigrants go?

- Amuedo-Dorantes, De la Rica (2005)
 - EPA (Labor Force Survey), 1999-2004
 - Immigrants settle in CC.AA with higher employment rates; more responsive than natives
- Geographic distribution immigrants
 - EPA 2006, ages 16-64, weighted, provinces
 - Concentrated along Mediterranean, Madrid, Ebro valley
 - Large regional dispersion (high correlation Padron)

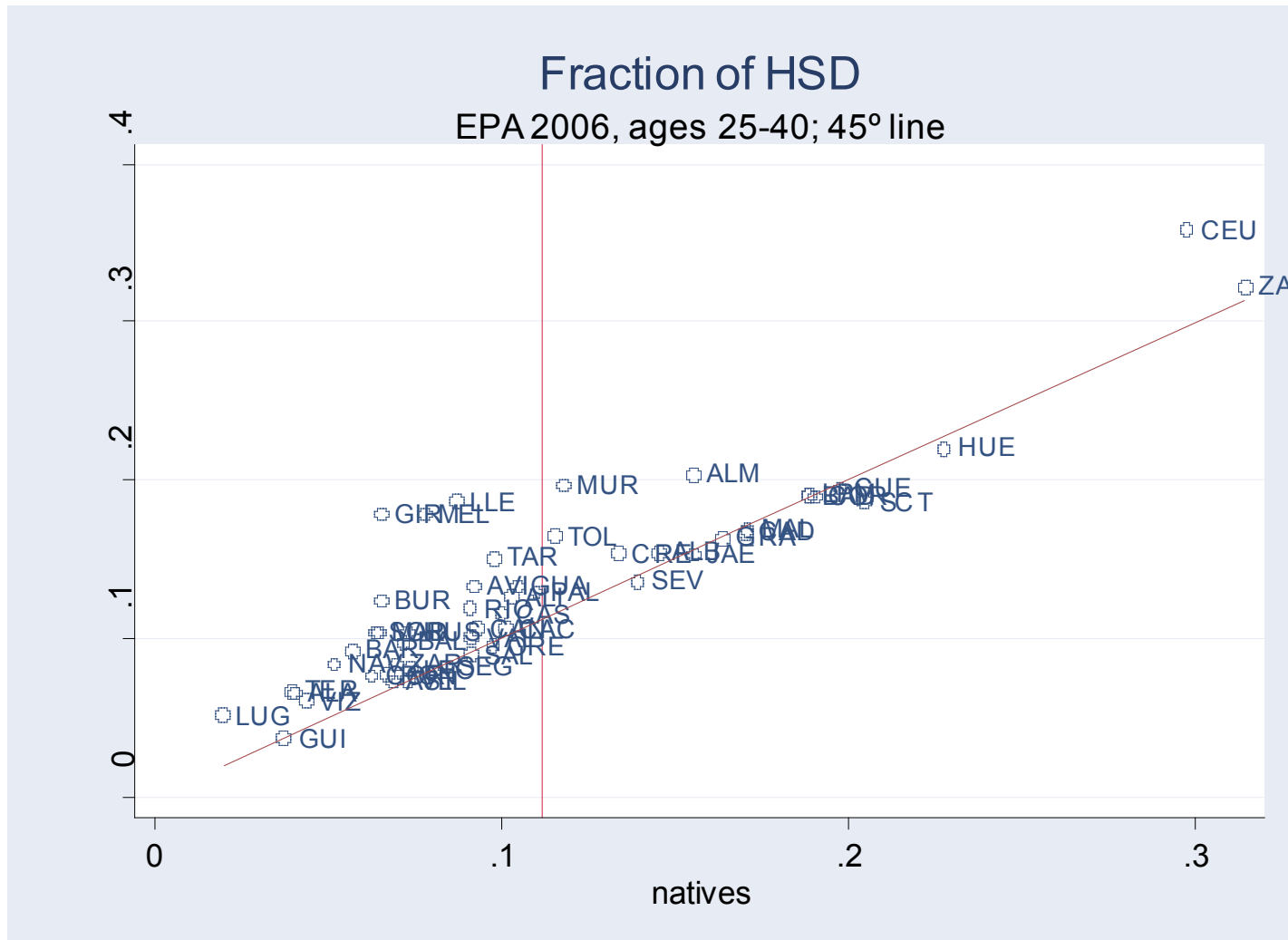
Table 1: Fraction of foreign-born, 2006
EPA, ages 16-64, weighted

province	% foreign-born
Cadiz	0.0294
Jaen	0.0295
Palencia	0.0307
Badajoz	0.0334
Zamora	0.0362
Cuenca	0.0373
Salamanca	0.0386
Caceres	0.0409
Huelva	0.0452
Valladolid	0.0478

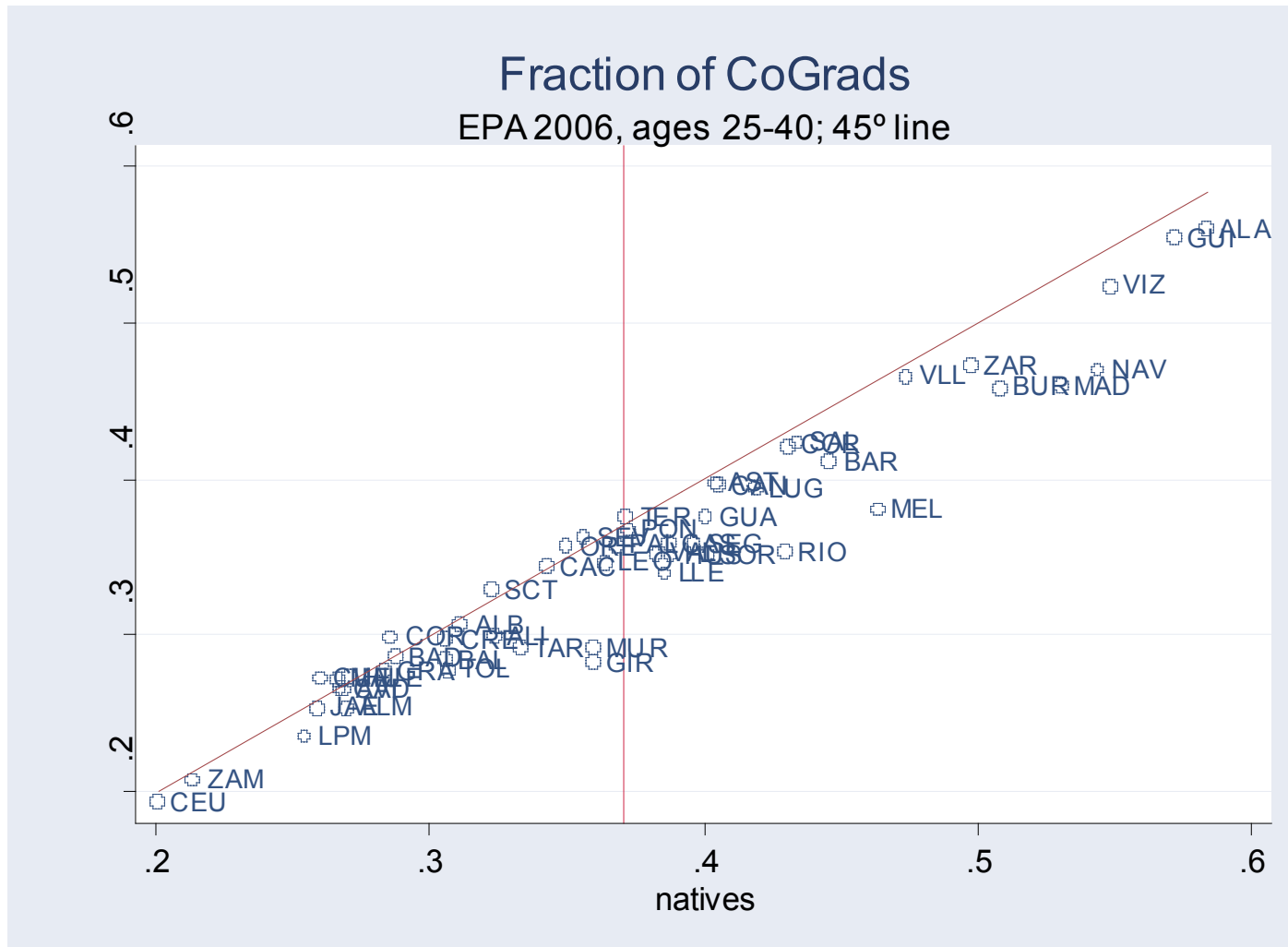
Melilla	0.1842
Castellon	0.1879
Lleida	0.1881
Tarragona	0.1937
Madrid	0.1997
Palmas Las	0.2070
Alicante	0.2102
Baleares	0.2245
Girona	0.2433
Almeria	0.2793
min	0.0294
mean	0.1118
max	0.2793
sdev	0.0654

2. Effect on regional skill distribution

- EPA 2006, ages 25-40, weighted
- Age immigrants suggests focus on young workers
- 3 education levels: HSD, HG, CG
- **Immigration as a relative increase in unskilled workers**
 - Average fraction of HSD: up 2.3% points, from 11.16%
 - Average fraction of CG: down 2.2% points, from 37.04%
 - Large variation



Note: vertical line is the mean fraction of HSD among natives across provinces (0.11)



Note: vertical line is the mean fraction of CG among natives across provinces (0.37)

3. Displacement of natives

- We test as in Card and DiNardo (2000)
 - Compare change in total unskilled population in province to inflow of unskilled immigration
 - IV estimation (lagged stock immigrants)
 - Preliminary results suggest no displacement in Spanish provinces

III. Native employment (and wages)

- Dolado, Jimeno, Duce (1997)
 - Effect of immigration on wages and unemployment of natives
- Carrasco, Jimeno, Ortega (2004)
 - Registry of work permits, EPA and Census (1991, 2001)
 - Correlations across skill groups, rather than regions (Borjas, 2003)
 - No significant effect on employment of natives

1. Data

- Employment
 - EPA, 1996-2006
- Wages
 - Not available in EPA
 - EES 1995, 2002: wages and education, but no province
 - ECHP, 1994-2001: Same thing.
 - MCVL: wages, occupation, and province, but no education

2. Descriptive statistics

- Employment rates by educational attainment
 - EPA 2006, weighted, ages 25-40
 - On average, lower for HSD
 - Low (positive) correlation across education levels

3. Specification: Card (2005)

$$\log(E_{i,t}^d / E_{i,t}^g) = a + b \cdot \log(s_{i,t}^d / s_{i,t}^g) + u_{it}$$

- Estimation:
 - region fixed effects
 - IVs for relative supply of HSD: 1) fraction of immigrant HSD, 2) historical immigration patterns

Province	Emp. Rate, HSD
Guipuzcoa	25
Ceuta	35
Orense	45
Jaén	58
Huelva	63
average	75
Cuenca	95
Avila	100
Guadalajara	100
Lugo	100
Teruel	100

Province	Emp. Rate, HG
Ceuta	79
Cádiz	81
Huelva	81
Las Palmas	82
Badajoz	82
average	88
Teruel	95
Avila	95
Segovia	95
Soria	96
Alava	97

Province	Emp. Rate, CG
Ceuta	70
León	73
Avila	75
Palencia	76
Lugo	77
average	88
Girona	94
Melilla	95
La Rioja	95
Alava	97
Guadalajara	97

IV. Sectoral composition and factor intensities

1. Data

- EPA 1996-2006
- sector as 2-digit CNAE-93

2. Descriptive statistics

- Sectors using HSD more intensively (2006)
Agriculture (40%), Selviculture (36%), Home help (32%),
Fishing (28%), Mining (27%), Construction (26%)

3. Specification: Lewis (2004)

$$\sum_{i=1}^I s_i^d(r) \Delta \ln N_i(r) = \lambda + \theta_r + \gamma \Delta \ln N^d(r) + \varepsilon_r$$

LHS=increase scale of HSD-intensive sectors

- Estimation:
 - region fixed effects
 - OLS and IV based on historical immigration patterns
- Test if adjustment to increase in supply of HSD via
 - Expansion of HSD-intensive sectors (Between)
 - Increase in relative intensity of HSD input (Within)

V. Concluding remarks

- Analysis of how economies adjust to immigration
Empirical work needed to quantify the multiple channels of adjustment
- Case of Spain
Spatial correlations approach seems particularly appropriate
- Implications for immigration policy